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(54) Title: TUMOR IMAGING COMPOUNDS

(57) Abstract: The invention provides novel amino acid compounds of use in detecting and evaluating brain and body tumors. These compounds combine the advantageous properties of  $\alpha$ -aminoisobutyric acid (AIB) analogs namely, their rapid uptake and prolonged retention in tumors with the properties of halogen substituents, including certain useful halogen isotopes such as fluorine-18, iodine-123, iodine-124, iodine-125, iodine-131, bromine-75, bromine-76, bromine-77, bromine-82, astatine-210, astatine-211, and other astatine isotopes. In addition the compounds can be labeled with technetium and rhenium isotopes using known chelation complexes. The amino acid compounds disclosed herein have a high specificity for target sites when administered to a subject in vivo. Preferred amino acid compounds include [ $^{18}\text{F}$ ] FAMP, ([ $^{18}\text{F}$ ]5a) and [ $^{18}\text{F}$ ]N-MeFAMP, ([ $^{18}\text{F}$ ]5b). The invention further features pharmaceutical compositions comprised of an  $\alpha$ -amino acid moiety attached to either a four, five or a six member carbon-chain ring. The labeled amino acid compounds are useful as imaging agents in detecting and/or monitoring tumors in a subject by Positron Emission Tomography (PET) and Single Photon Emission Computer Tomography (SPECT).

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/12748

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : C07C 229/00; C07F 13/00

US CL : 562/574; 556/46; 534/14

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 562/574; 556/46; 534/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Continuation Sheet

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5,808,146 A (GOODMAN et al.) 15 September 1998(25.09.1998), see claims 1-27, column 11, lines 1015.	1-27

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

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**INTERNATIONAL SEARCH REPORT**

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**Continuation of B. FIELDS SEARCHED Item 3:**  
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